

# ALEXANDRE CARMINOT

Engineering Student - Machine Learning & Medical Engineering

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## EDUCATION

Master - Medical Engineering EPF Engineering School Paris	09/2019 - Present Expected Graduation in 2025
<ul style="list-style-type: none"><li>Problem-solving, analytical and critical thinking, medical engineering principles, programming, device design.</li></ul>	
Computer Science - Exchange Program Tianjin University	09/2024 - Present
<ul style="list-style-type: none"><li>Algorithmic programming, machine learning , computer vision, applied data science</li></ul>	
Intelligent Medical Engineering - Exchange Program Tianjin University	09/2023 - 01/2024
<ul style="list-style-type: none"><li>Precision medicine, neurosciences, brain-computer interfaces (BCI), medical imaging basics, fundamentals of medical engineering.</li></ul>	

## SPECIALIZATION COURSES

Deep Learning and Advanced Tensorflow DeepLearning.AI	Advanced Machine Learning on Google Cloud Google
Advanced Medical Neuroscience Duke University	Machine Learning Specialization Stanford University & DeepLearning.AI

## PROJECTS

BCI application - In Progress Developing a BCI simulator to interpret various EEG and MEG signals to enable real-time virtual control based on user thought patterns. <ul style="list-style-type: none"><li>Using datasets for muscle movement, arithmetic, and thought recognition to classify user thought-based actions in real-time control applications</li><li>Goal : Extract the "thoughts" and actions of the subjects to link it to various controls.</li></ul>
BCI Workshop - Tianjin University Hand Movement Recognition (MATLAB) <ul style="list-style-type: none"><li>Developed and deployed a real-time hand gesture recognition system using flexion sensors and AI, classifying six unique static and dynamic patterns with pattern recognition algorithms. Demonstrated successful identification with 98% accuracy.</li></ul>
Disease Prediction Algorithm - Python Self-developed an AI to determine a disease based on a provided symptoms list. Currently predicts 41 common diseases using 131 distinct symptoms. <ul style="list-style-type: none"><li>Developed a disease prediction model that achieved 96% accuracy by combining an ensemble of XGBoost, SVM, and ReLu models. Benchmarked model performance against a deep neural network to ensure robustness and model reliability</li></ul>

## EXPERIENCE

AI Model Review Specialist Outlier.AI   Remote   Current	01/2024 - Present
<ul style="list-style-type: none"><li>Reviews and flags critical errors in logic and generated code in large language model outputs, enhancing model precision and alignment with user expectations.</li></ul>	
Private Tutor and Esports Coach	06/2022 - 09/2023
<ul style="list-style-type: none"><li>Led personalized tutoring sessions in Math and Physics for 10 students, strengthening foundational skills and boosting student confidence in subject mastery.</li><li>Customized tutoring and coaching strategies to suit individual skill levels, resulting in an improvement of the student's performance.</li></ul>	
Internship Zen2050Maintenant	06/2022 - 9/2022 Paris
<ul style="list-style-type: none"><li>Developed and implemented interactive exhibition stands for Zen2050's annual event, creating eco-conscious games, climate-themed art, and educational activities that engaged visitors in sustainability initiatives.</li></ul>	

## ABOUT ME

As a student of engineering and medicine, my journey is deeply rooted in the intersection of medicine and technology. Focusing on medical engineering, I am driven by a passion for software development and artificial intelligence, particularly in the realms of brain-computer interfaces, machine learning, and neuro-engineering. My work has spanned projects using Python, MATLAB, and C++ to explore data analysis, signal processing, and AI-driven solutions.

## FIND ME ONLINE

	<a href="#">Alex-Irae [link]</a>
	<a href="#">My Portfolio [link]</a>
	<a href="#">Alexandre CARMINOT [link]</a>

## SKILLS

<u>Programming</u> Python - C++ - Java - Docker - Git MATLAB - HTML, CSS & Javascript
<u>Libraries</u> Tensorflow - Keras - MNE - Scikit PyTorch - Seaborn - SciPy
<u>Technical Skills</u> Machine Learning - Neurosciences Deep Learning - CNN - NLP Computer Vision
<u>Engineering Skills</u> Problem Solving - Innovation - Analysis Critical thinking - Device design

## LANGUAGES

French	Native, Voltaire Certification
English	Expert, TOEIC (980/990)
Spanish	Intermediate, B1
Chinese	Elementary, HSK3

## PASSIONS & HOBBIES

- Martial Arts : Taekwondo (Red Belt), Judo (Brown Belt)
- Team sports : Rugby & Soccer
- Music : Piano (Playing for seven years)
- Science : Astronomy, Cosmology, Archaeology